Technical Data Sheet

Bridge Identification:	1830110000000B01
Facility Carried:	M 37
Feature Intersected:	Pine River
Location:	South Branch Township
County:	Wexford
Region:	North
Year Built:	1948
Year Reconstructed:	1976, 1987
Bridge Type:	Two-Girder System
No. of Spans:	3
Deck Area:	13,895 S.F.
Paint System:	Type 4
Paint Area:	35,000 S.F.

Plan View Looking North (1)

West Elevation (2)

Fracture-Critical Members
1. Pin and Hanger Assemblies 2. Tension Areas of Main Girders

Fatigue-Sensitive Details
1. Floorbeam-to-Girder Connections 2. Lateral Bracing-to-Girder Connections 3. Welds on Splice Plates at Pier Bearings

General Bridge Description

Bridge B01 of 83011, also known as the Peterson Bridge, is a three-span, steel, two-girder-system bridge carrying Michigan State Route 37 over the Pine River in the South Branch Township in Wexford County. The spans measure 101'-4½", 122'-3", and 101'-4½" from south to north, and the overall length of the bridge is 325'-0". The out-to-out width of the deck is 42'-9". The clear roadway width between curbs is 35'-0", providing for two 12'-0" travel lanes, each with a 5'-6" shoulder. A 3'-10½" wide sidewalk lines each edge of the roadway. The bridge is supported by reinforced concrete abutments and rigid frame piers.

The floor system is comprised of longitudinal stringers and transverse floorbeams, that frame into the two main riveted girders along either edge of the superstructure. Span 2 contains a 43'-1" suspended span supported by pin and hanger assemblies at the end of the girders cantilevered from Spans 1 and 3.

The bridge was built in 1948 and rehabilitated in 1987, when the pins and hangers for the non-redundant suspended spans were replaced, the joints were replaced, and the superstructure was painted. The deck received a latex overlay in 1976.

Plan View Looking North (3)

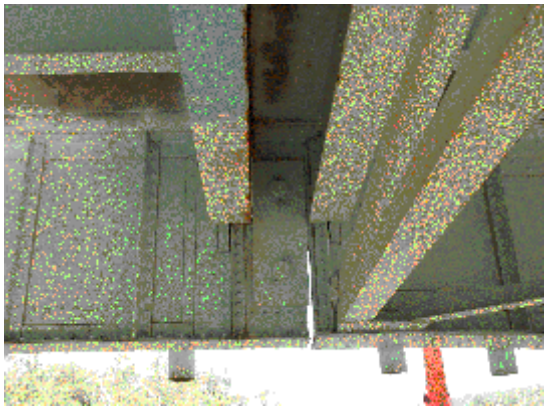
West Elevation (4)

Inspection Checklists

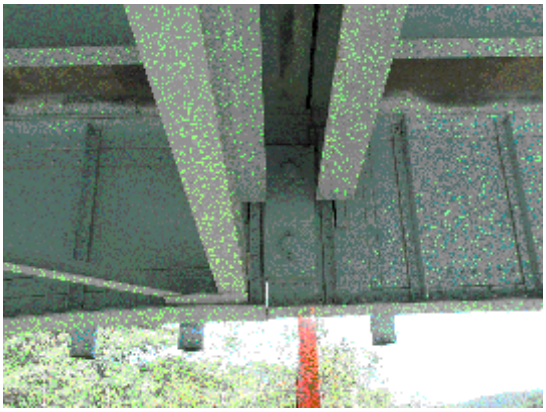
For additional information and detailed inspection procedures, refer to the Inspection and Maintenance Program section of this manual.

Fracture-Critical Members/Fatigue-Sensitive Details

! **Pin and hanger assemblies.** (Photos 5 and 6)



Typical Pin and Hanger Assembly at Fixed Joint (5)



Typical Pin and Hanger Assembly at Expansion Joint (6)

! **Girder webs at floorbeam connections.**

! **Lateral bracing gusset plates at floorbeam connections.** (Photo 7)

! **Tension areas of main girders.** See Figure 1 in the Inspection and Maintenance Program section of this manual for tension areas.

Typical Connection of Floorbeam to Girder at Pier (7)

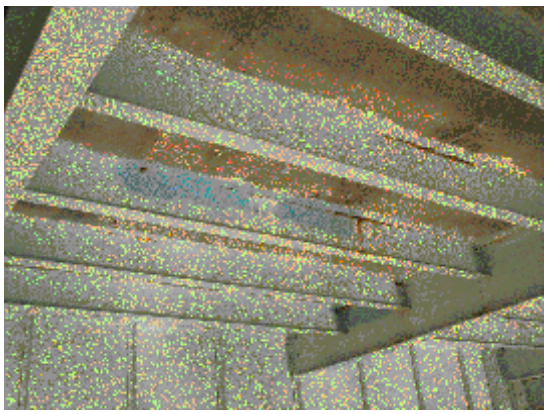
! **Bearings and splice plates at piers.** (Photos 8 and 9) These members have welds that should be carefully inspected.

Typical Welded Girder Splices at Pier (Exterior) (8)

Typical Welded Girder Splices at Pier (Interior) (9)

Other

! **Deck.** (Photos 10 and 11) Deck overlays are susceptible to cracks and potholes. The cold joints in the deck over each floorbeam are susceptible to leaking, which allows corrosion to form on the top flanges of the floorbeams.

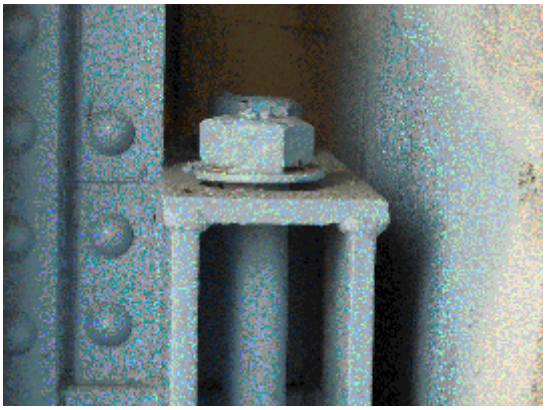


Corrosion at Underside of Deck in Suspended Span (11)

Corrosion Caused by Leaking Cold Joint in Deck (10)

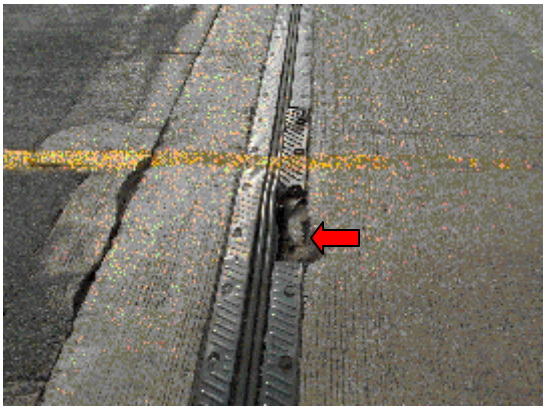
! **Bearings at abutments.** (Photos 12 and 13) These bearings have turnbuckle tie-downs, which should be tight-fitting to the bearings. When pack rust is removed from the bearings, the spans drop slightly and the tie-downs can loosen. These should be monitored for distress to the structure.

Typical Turnbuckle Tie-down at Abutment (12)

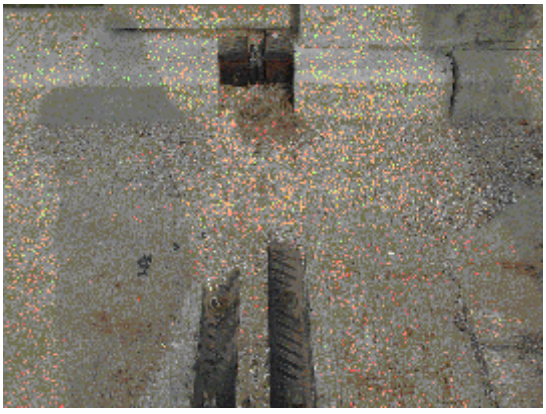


Loose Tie-down (13)

! **Joint at North Abutment.** (Photos 14 and 15) This joint is broken and the seal can tear, allowing it to leak excessively. Also, the joints are susceptible to collecting dirt and debris.



Broken/Torn Joint (14)



Joint Filled with Dirt/Debris (15)

Maintenance Recommendations

Regularly Scheduled Maintenance Items

Recommendation	Schedule
Clean bridge drainage system components (deck drains and downspouts).	6 to 12 months
Flush bridge deck joints and check for leaks.	12 months
Powerwash bridge superstructure.	12 months
Powerwash bearings and pin and hanger assemblies.	12 months